Department of Ecology's Air Quality Program
Response to Public Comments on
Draft PSD-06-01 for the 7.5 MW Steam Turbine Project
Grays Harbor Paper LP
Hoquiam, Washington

Ecology accepted public comments from September 27, 2006 to October 27, 2006 on the proposed Prevention of Significant Deterioration (PSD) permit for installation of a 7.5 MW annual capacity steam turbine at the Grays Harbor Paper pulp mill in Hoquiam, Washington. One written comment was received during the public comment period. This document responds to that comment.

Comment 1: Fawn R. Sharp, President of the Quinault Indian Nation wrote:

The Quinault Indian Nation (Nation) takes this opportunity to comment on the proposal by the Department of Ecology to approve the application by Grays Harbor Paper (GHP) LP to install and operate a 7.5 MW steam turbine. This facility operates within an area utilized for fishing under Treaty reserved fishing rights. As such, Quinault Tribal members may be affected by any pollution caused by this operation. The stack emissions from this facility are problematic for air quality in the surrounding area. The Nation is concerned that the lack of additional controls for emissions will lead to increased air pollution due to the increased combustion using the existing facility, and that increased air pollution will increase the health risks to our fisherman in the vicinity.

Though the steam turbine itself does not emit any air pollution, the existing hog fuel boilers that were "grandfathered" into compliance at Grays Harbor Paper will have increased combustion to power this new turbine. According to the Public Notice, the Department of Ecology is not requiring this facility to install additional controls on the existing facility. We request that you consider adding additional stack controls that will limit emissions from the boilers and the facility overall to be in complete compliance with current air quality regulations.

Grays Harbor Paper has a history of air quality violations (see attached) and we are concerned that these violations will increase with the anticipated increased use of the existing boilers to operate the new turbine. We support the use of biomass for electricity generation, but feel that the increased combustion necessary for these operations requires that additional stack controls are needed to protect public health and comply with current air quality regulations.

Thank you for considering this request. If you have any questions, please contact Lisa Riener at 360-276-8215 ext. 484.

Response 1: The Department of Ecology thanks the Quinault Indian Nation for these comments on the 7.5 MW turbine project's proposed PSD permit, and responds with the following:

The ability to require additional pollution controls was discussed in Section 2.3 and Section 3.1 of the Technical Support Document. As stated there, because the boilers themselves are not being modified, the federal PSD permitting rules and the state New Source Review (NSR) rules

do not allow Ecology to require additional pollution controls. If the boilers were being physically modified, or the boilers were being installed as a new project, these rules would require that Best Available Control Technology be installed. Because the emissions increase is due to "increased utilization" of the existing boilers, federal permitting guidance does not allow BACT to be required. Guidance does require analysis of the increased environmental impacts by computer modeling of emissions impacts.

Modeling of emissions impacts was done, and described in Sections 4 and 5 of the Technical Support Document. Impacts on National Ambient Air Quality Standards (NAAQS) and PSD Increment were analyzed and the analysis showed that no standards were exceeded. The particulate standard was approached by the proposed maximum PM_{10} emission rates, so pound per hour limits on PM_{10} particulates were included in the permit. The environmental impacts of emissions of nitrogen oxides (NO_X) and carbon monoxide (CO) were well below any NAAQS. Limits on steam production by each boiler were included to assure that NO_X and CO emissions did not exceed the analyzed impact levels.

The Nation stated its concern that since the GHP plant had a history of violations, increased emissions might lead to increased violations. This concern is reasonable. Ecology discussed this with the Olympic Region Clean Air Agency (ORCAA) and with the GHP plant personnel. Each violation was reviewed to determine its cause and whether increasing boiler operating levels might increase the potential for that type of violation to happen more often.

Analysis divided these violations into three categories:

1. **Actual opacity violations:** Four (4) opacity violations were issued because of excess opacity that was actually observed coming out of a boiler stack. Three of these were excused because they were due to startup/shutdown or maintenance activities. The explanation of why they happened and would not be repeated was acceptable to ORCAA. One was not excused. No violations of this type have occurred since August 15, 2002.
2. **Procedural opacity related violations:** Six (6) violations were issued for failure to read opacity within one hour after the requirement to verify compliance was triggered. GHP's Title V Operating Permit requires that pressure drops or temperatures of pollution control equipment like multiclones, scrubbers, and cinder hoppers be logged. If the reading is outside of the normal operating range, stack opacity must be read by a certified opacity reader within one hour (or early the next morning if the bad reading happens at night). This is a logical way of determining whether a problem in a control device causes a real problem with stack opacity. This type of violation happened several times in 2000, and a series of escalating penalties ($100, $200, and $500) were assessed and paid. It happened again in 2002 and 2003, and larger penalties ($1,000) were assessed and paid each time. GHP responded by having an intense operator training program after the 2002 incident, and disciplining an employee after the 2003 incident. No violations of this type have occurred since December 6, 2003.

3. **Permit violations not related directly to emissions:** Three (3) technical permit violations were issued for failure to do required logging of maintenance activities and annual reporting deficiencies in 1999 and 2000. These were corrected, fines paid, and have not re-occurred since then.

When the violations are analyzed, it appears that Category 1 contains traditional stack opacity violations that could possibly increase with increased boiler capacity utilization. GHP has had one unexcused violation of that type, on August 15, 2002. Violations due to failure to read opacity after an out of range instrument reading should not increase with increased steam production in the boiler because they are caused by failure of an operator to follow up on a problem, not an actual emissions violation.

Attachment 1 lists GHP's violations by date, NOV number, explanation of violation, and penalty assessed.

Other reasons for increased opacity from the boiler stacks were discussed and analyzed for their potential to affect future operations. GHP stated that use of large amounts of oil could lead to black smoke from the boiler stacks due to poor combustion. Oil use has been reduced during the last two years for economic reasons because heat from oil costs more than heat from wood chips. GHP states that it will minimize use of oil in the future for economic and environmental reasons. Oil will still be needed at times to help burn wet hog fuel in the winter, but will not be used for a general heating fuel because it costs too much and it also can cause opacity problems.

Discussions with GHP also brought up maintenance of oxygen sensors on each of the boilers. Residual oxygen content is a good indicator of proper combustion conditions as well as boiler efficiency. GHP agreed to carefully maintain oxygen sensors so that the residual oxygen level is accurately measured on each boiler.

One other normal hog fuel boiler opacity issue should be noted. During normal operation, hog fuel boiler combustion chamber grates need to be periodically cleaned so that they can burn as cleanly as possible. Washington State regulation WAC 173-400-070(2) allows the normal 20% opacity limit to be exceed for fifteen consecutive minutes once in any eight hours to allow soot blowing and grate cleaning necessary to the operation of these units. This practice is to be scheduled for about the same times each day.

In summary:

1. The permitting regulations do not allow additional pollutant controls to be required for this permitting action.
2. A review of the history of air quality related violations at the GHP plant site indicated past problems, but they seem to be resolved over the last 2.5 years.

3. Allowing increased use of the hog fuel boilers to produce steam for the 7.5 MW steam turbine driven electrical generator may increase the potential for more true stack gas opacity related violations, but not for the majority of past violations which were due to failure to read opacity after an out of range equipment pressure drop reading. Those violations were due to lack of operator follow through of procedures, not due to a high level of particulate emissions causing an exceedance of the opacity limit.
4. Use of fuel oil has caused black smoke in the past. Its use in the future will be minimized.
5. GHP agreed to maintain boiler oxygen sensors carefully to better measure residual oxygen levels and help control combustion more optimally.
6. Normal hog fuel boiler operation requires short periods of higher opacity to allow soot blowing and grate cleaning.

Attachment 1: Grays Harbor Paper Notice of Violation History

Date of Violation	NOV Number	Regulation Citation	Penalty Amount
7/22/1997	1266	Section 9.03 of OAPCA Regulation 1 (Opacity from #6 greater than 20%. This opacity violation turned out to be caused by a start-up/shut-down circumstance.)	$0(Excused as an unavoidable excess emission.)
7/2-3/1999	1389	AOP Condition 2.1 (Maintenance records. This violation resulted from failure to log maintenance activities on 7/2/1999 through 7/3/1999.)	$100
11/21-24/1999	1388	AOP Condition 2.1 (Maintenance records. This violation resulted from failure to log maintenance activities on 11/21/1999 through 11/241999.)	$100
01/01/2000	1635	AOP Condition 3.2 and AOP Condition 3.4 (Annual Compliance Certification Report)	$100
02/28/2000	1636	AOP Condition 9.5a (Failure to perform a timely Method 9A reading In this case, an out-of-range pressure drop reading was observed, but a Method 9A reading did not occur within 1 hour.)	$100
6/24/2000	1399	AOP Condition 9.5a (Failure to perform a timely Method 9A reading. This violation occurred after a Method 9A reading was not performed within the 1-hour time frame.)	$100
7/24/2000	1400	AOP Condition 9.5a (Failure to perform a timely Method 9A reading. This violation was for failure to perform a timely Method 9A reading after low-pressure drop readings were observed.)	$250
10/15/2000	1591	AOP Condition 9.5a (Failure to perform a timely Method 9A reading. This violation occurred after scrubber pressure drop exceeded permitted range.)	$500
9/10/2001	1194	Section 9.03 of OAPCA Regulation 1 (Opacity violation.)	$0 (Excused as an unavoidable excess emission.)
9/12/2001	1793	Section 9.03 of OAPCA Regulation 1 (Opacity violation.)	$0 (Excused as an unavoidable excess emission.)
8/15/2002	1795	Section 9.03 of OAPCA Regulation 1 (Opacity violation.)	$1000 reduced to $500
7/2/2002	1799	AOP Condition 9.5a (Failure to perform a timely Method 9A reading. This violation was for failure to perform a timely Method 9A reading after low-pressure drop readings were observed.)	$1000
12/6/2003	2139	AOP Condition 9.5a (Failure to perform a timely Method 9A reading. This violation was for failure to perform a timely Method 9A reading after low-pressure drop readings were observed.)	$1000